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Serial No. 10/635,819

Attorney Docket No. 200206815-1

Title: METHODS AND APPARATUS UTILIZING EMBEDDED DATA LAYERS

REMARKS**Amended Claims**

Claims 1-6, 12 and 17-20 are amended herein. Claims 21-45 are cancelled. Applicant reserves the right to reintroduce the cancelled claims in one or more co-pending divisional applications.

In the Specification

Paragraph [0017] is amended herein to update reference to the commonly assigned co-pending case, titled EMBEDDED DATA LAYERS. Specifically, paragraph [0017] was amended to change reference from "HP Patent Application Ref. No. 200206812-1" to "10/623,878". Applicant respectfully submits that no new matter has been introduced by this amendment.

Claim Rejections Under 35 U.S.C. § 112

Claims 1, 6, 12 and 17 were rejected under 35 U.S.C. §112, first paragraph, because these claims are "Single Means Claim". Applicant traverses this rejection and feels that claims 1, 6, 12, and 17 are allowable for the following reasons.

The Examiner stated that "[c]laims 1, 6, 12 and 17 are rejected under 35 U.S.C. 112, first paragraph, because these claims are "Single Means Claim". A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See MPEP 2164.08(a)." (Office Action mailed August 8, 2007, Page 3).

Applicant respectfully disagrees and maintains that claims 1, 6, 12 and 17 are not drafted in "means-plus-function" format as described in the sixth paragraph of §112 and in MPEP §2181. Applicant also respectfully maintains that, even if claims 1, 6, 12 and 17 were considered

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to be drafted in "means-plus-function" format, that they contain additional "elements" and therefore are not single means claims.

Applicant contends that the intent of MPEP §2164.08(a) is to avoid claims that only limitation (element) is defined by the "means for" limitation (e.g., "a means for X") and thus have undue breadth ascribed to them that was not enabled by the specification. As stated in MPEP §2164.08(a), "[a] single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. §112, first paragraph," and "[w]hen claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor." See, MPEP §2164.08, §2164.08(a), §2181

In support of this Applicant notes that *In re Hyatt*, states that "a so-called 'single means claim,'" is "a claim drafted in 'means-plus-function' format yet reciting only a single element instead of a combination." *In re Hyatt*, further states that such single element "means-plus-function" are problematic because "[t]he first sentence of the second paragraph of §112 is essentially a requirement for *precision and definiteness* of claim language." However, "[t]he final paragraph of §112 saves *combination* claims drafted using means-plus-function format from this problem by providing a construction of that format narrow enough to avoid the problem of undue breadth as forbidden by the first paragraph. But no provision saves a claim drafted in means-plus-function format which is not drawn to a combination, i.e., a single means claim." *In re Hyatt*, 708 F.2d 712, 713-715, 218 U.S.P.Q. 195 (Fed. Cir. 1983).

Applicant respectfully maintains that, if claims 1, 6, 12 and 17 are considered to be drafted in "means-plus-function" format, as the Examiner asserts, that they contain additional "elements" and therefore are not single means claims. In particular, Applicant respectfully maintains that claim 1 requires, at least, that a database contain (1), one or more advertising images, and that the advertising images each have (2) a plurality of associated layers of metadata. Claim 6 requires that a method of operating a database of advertising images comprise (1) selecting an advertising image, and (2) selecting two or more layers of metadata associated with the selected image. Claim 12 requires that a method of operating an advertising image repository comprise (1) selecting an advertising image and (2) selecting two or more layers of metadata associated with the selected image from the advertising image repository. Claim 17

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requires that a computer-usable medium having computer-readable instructions stored thereon for execution by a processor to perform a method that (1) selects an advertising image from a repository, and (2) selects two or more layers of metadata associated with the selected image from the repository.

Applicant therefore contends that claims 1, 6, 12 and 17 present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims and that the specification does clearly describe the invention in a way to enable one skilled in the art to make or use the invention.

Applicant thus respectfully requests that the rejection of the claims 1, 6, 12 and 17 under 35 U.S.C. § 112, first paragraph, be withdrawn in that claims 1, 6, 12 and 17 are not "means-plus-function" claims under the sixth paragraph of 35 U.S.C. §112, and that the specification does clearly describe the invention in a way to enable one skilled in the art to make or use the invention.

Claim Rejections Under 35 U.S.C. § 101

Claims 1-5 and 17-20 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Applicant traverses this rejection and feels that claims 1-5 and 17-20 are allowable for the following reasons.

In rejecting claims 1-5 and 17-20, the Examiner stated that:

"Claims 1-5 define an "image database" with functional descriptive material. While functional descriptive material may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a "database" per se does not fall within any of the four statutory classes of 35 U.S.C. §101. A "database" is not a process because it is not a series of steps per se. Furthermore, a "database" is not a "machine", "composition of matter" or a "manufacture" because these statutory classes "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." (1 D. Chisum, Patents § 1.02 (1994)). Machines, manufactures and compositions of matter are embodied by physical structures or material, whereas a "database" has neither a physical structure nor a tangible material. That is, a "database" is not a "machine" because it has no physical structure, and does not perform any useful, concrete and tangible result. Likewise, a "database" is not a

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"composition of matter" because it is not "matter", but rather a form of energy. Finally, a "database" is not a "manufacture" because all traditional definitions of a "manufacture" have required some form of physical structure, which a claimed signal does not have.

Claims 17-20 define a "computer-readable medium" which "having computer readable instructions stored" (interpretation: a "computer-readable medium" can be a piece of paper and it can be read by a printer or a scanner, and "having computer readable instructions stored" is interpreted as instruction can be read by a computer and stored in a computer, but no further steps to be executed to produce or generate any useful, tangible and concrete thing). In addition, the claim only selects an image and/or two layer or more layers of metadata, but not to generate or produce any useful, concrete and tangible result. Therefore, a "computer-readable medium" per se does not fall within any of the four statutory classes of 35 U.S.C. §101 as discussed in the rejection of claims 1-5.

A "manufacture" is defined as "the production of articles for use from raw materials or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303,308,206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931).

Therefore, a "database" and a "computer-readable medium" are considered non-statutory because it is a form of energy, in the absence of any physical structure or tangible material, that does not fall within any of the four statutory classes of 35 U.S.C. §101"

Applicant respectfully disagrees with the Examiner's rejection of claims 1-5 and 17-20 under 35 U.S.C. § 101 and respectfully maintains that claims 1-5 and 17-20 are statutory subject matter.

Applicant notes that MPEP §2106.01(I) states:

"Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. . . . In contrast, a *claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware*

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components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical 'things.' They are neither computer components nor statutory processes, as they are not 'acts' being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a *claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.*

...
USPTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material per se and hence nonstatutory.

...
When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim.

...
"

{Emphasis Added}

Applicant also notes that MPEP §2106.01(I) states:

"... USPTO personnel should be prudent in applying the foregoing guidance.

Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the

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necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping or sequence of musical notes read from memory and thereafter causes another defined series of notes to be played, requires a functional interrelationship among that data and the computing processes performed when utilizing that data. As such, a claim to that computer is statutory subject matter because it implements a statutory process."

In addition, Applicant further notes MPEP §2106 –"Patent Subject Matter Eligibility," where Applicant notes that MPEP §2106(IV)(C)(2)((2)) states:

"For purposes of an eligibility analysis, a physical transformation 'is not an invariable requirement, but merely one example of how a mathematical algorithm [or law of nature] may bring about a useful application.' . . . If USPTO personnel determine that the claim does not entail the transformation of an article, then USPTO personnel shall review the claim to determine it produces a useful, tangible, and concrete result. In making this determination, *the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather on whether the final result achieved by the claimed invention is 'useful, tangible, and concrete.'* . . ."

{Emphasis Added}

Applicant further notes that MPEP §2106(IV)(C)(2)((2))(a)-(c) state:

"a) **'USEFUL RESULT'**

For an invention to be 'useful' it must satisfy the utility requirement of section 101. The USPTO's official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. . . . In addition, when the examiner has reason to believe that the claim is not for a practical application that produces a useful result, the claim should be rejected, thus requiring the applicant to distinguish the claim from the three 35 U.S.C. 101 judicial exceptions to patentable subject matter by specifically reciting in the claim the practical application. . . .

b) **'TANGIBLE RESULT'**

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The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that *the process claim must set forth a practical application of that judicial exception to produce a real-world result.* . . . *In other words, the opposite meaning of 'tangible' is 'abstract.'*

c) **CONCRETE RESULT'**

Another consideration is whether the invention produces a 'concrete' result. Usually, this question arises when a result cannot be assured. In other words, *the process must have a result that can be substantially repeatable or the process must substantially produce the same result again. . . .*"

{Emphasis Added}

Applicant disagrees with the Examiner's characterization that "a 'computer-usable medium' can be a piece of paper and it can be read by a printer or a scanner, and 'having computer readable instructions stored' is interpreted as instruction can be read by a computer and stored in a computer, but no further steps to be executed to produce or generate any useful, tangible and concrete thing". Applicant also respectfully maintains that databases are well known in the art to be computer programs and data stored on computer-readable media that define structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized. In addition, Applicant notes that computer-usable mediums are defined, at least at Paragraph [0035] of the Specification of the Present Application, and are stated as being "removable and non-removable magnetic media, optical media, dynamic random-access memory (DRAM), static random-access memory (SRAM), read-only memory (ROM) and electrically-erasable and programmable read-only memory (EEPROM or Flash)." Applicant also respectfully maintains that "a computer-usable medium having computer readable instructions stored thereon" would be viewed as equivalent to a computer-readable medium by one of ordinary skill in the art. As such, in light of the above arguments and recited sections of the MPEP, Applicant respectfully contends that computer-usable mediums and databases are statutory.

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However, in the interest of furthering prosecution of the Present Application, Applicant has herein amended claims 1-5 and 17-20 to specifically recite a "computer-readable medium" as is utilized in MPEP §2106.01. Applicant respectfully maintains that computer-readable medium and databases are computer storage devices, which are computer components and therefore statutory. Applicant further contends that these amendments to claims 1-5 and 17-20, would be understood by one skilled in the art as being enabled by the specification and therefore not new matter.

Applicant respectfully maintains that claim 1, as amended, from which claims 2-5 depend, recites, in part, "[a] computer system" having "an image database of one or more advertising images stored on a computer-readable medium, each image having a plurality of associated layers of metadata" that is a tangible item (a computer system) that achieves the useful, tangible and concrete result of storing an image database of images, each image having a plurality of associated metadata layers.

Applicant respectfully maintains that claim 17, from which claims 18-20 depend, recites, in part, "[a] computer-readable medium having computer-readable instructions stored thereon for execution by a processor to perform a method" that achieves the useful, tangible and concrete result of "selecting an advertising image from a repository; and selecting two or more layers of metadata associated with the selected image from the repository."

As such, Applicant maintains that claim 1-5 and 17-20, as stated in MPEP §2106.01, are a "computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized" and that "the final result achieved by the claimed invention is useful, tangible and concrete." Applicant therefore maintains that claims 1-5 and 17-20 are statutory.

As such, Applicant asserts that the relevant features of claims 1-5 and 17-20, in particular, the claiming of "a computer-readable media" and "an image database", as a statutory claiming of a computer program in conjunction with a physical structure, that recite in the claims the specific, substantial and credible utility of a specific practical application producing a final result that is useful, tangible, and concrete, and is described in the specification in such a way as to enable one skilled in the art to practice the invention. Applicant therefore contends claims 1-5 and 17-20 are statutory by the analysis of MPEP §2106 and §2106.01 under 35 USC 101, and

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respectfully requests reconsideration and withdrawal of the rejection to claims 1-5 and 17-20 by the Examiner.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Davis et al. (U.S. Publication No. 2002/0001395) in view of LeMole et al. (U.S. Patent No. 6,009,410).

Claims 6-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over LeMole et al. (U.S. Patent No. 6,009,410) in view of Davis et al. (U.S. Publication No. 2002/0001395).

Applicant respectfully traverses these rejections and feels that claims 1-20 are allowable for the following reasons.

Applicant respectfully maintains that Davis et al. discloses methods of associating metadata with images and media signals to be steganographically encoded in the image or media signal. In this, Applicant contends that Davis et al. only discloses steganographically encoding the metadata in a watermark having a single layer and does not disclose or suggest embedding each associated layer of metadata in a separate sub-watermark of an image watermark, as required by the Applicant's claimed invention. Applicant also respectfully maintains that paragraph [0196] of Davis et al. recited by the Office Action in support of plurality of associated layers of metadata only discloses that different metadata types may have multiple data forms in them (video, audio, etc.) and that each can be compressed and encoded utilizing a different data CODEC.

Applicant further respectfully maintains that LeMole et al. discloses a method for presenting customized advertising to a user on the world wide web that stored advertising images in a database and does not disclose or suggest associating multiple layers of metadata with an image and encoding each associated layer of metadata in a separate sub-watermark of an image watermark.

As such, Applicant contends that neither Davis et al. or LeMole et al., taken either alone or in combination, teaches or suggests embedding each associated layer of metadata in a separate sub-watermark of an image watermark and therefore does not teach or suggest all elements of the claimed invention.

Applicant respectfully contends that claims 1, 6, 12 and 17, as pending, have been shown to be patentably distinct from the cited reference. As claims 2-5, 7-11, 13-16 and 19-20 depend

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from and further define claims 1, 6, 12 and 17, respectively, they are also considered to be in condition for allowance. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1-20.

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In view of the above remarks, Applicant believes that all pending claims are in condition for allowance and respectfully requests a Notice of Allowance be issued in this case. Please charge any further fees deemed necessary or credit any overpayment to Deposit Account No. 08-2025.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 312-2207.

Respectfully submitted,

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